

II.—Notes on the Fungus growing and eating habit of *Sericomyrmex opacus*, Mayr. By FREDERIC W. URICH, F.E.S.

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IN Bull. de la Soc. Vaud. des Sc. nat., Vol. xx., No. 91, 1884, p. 49, Dr. A. Forel called attention to the near relationship of the genera *Atta*, *Glyptomyrmex*, *Cyphomyrmex*, *Sericomyrmex apterostigma*, etc., and in Mitth. der Schweiz. entom. Ges., Bd. 8, Heft 9, 1892, he unites these genera in a special group, "the *Attini*," under the subfamily *Myrmicidæ*. This was done on morphological grounds, and Dr. Möller, in his fascinating work,* fully confirms biologically Dr. Forel's hypothesis in proving that the genera *Apterostigma*, *Glyptomyrmex*, and *Cyphomyrmex*, are, like the genus *Atta*, mushroom growers and eaters. Species characterized by this habit are well represented in Trinidad, viz.—

Atta cephalotes, L.

† *A. (Acromyrmex) octospinosa*, Reich.

† *A. (Trachymyrmex) urichii*, Forel.

† *Apterostigma urichii*, Forel.

† *A. mayri*, Forel.

To this list and in support of Dr. Forel I have to add *Sericomyrmex opacus*, Mayr, whose mushroom growing and eating habits do not seem to have been previously recorded. The nests of these ants are found commonly about Port of Spain, in gardens, in the grass as a rule, but sometimes in the flower beds, and from their peculiar raised entrance can readily be recognized. They are always excavated in clayey soil, and the raised entrances, which are more or less cylindrical, are constructed with the particles of earth resulting from their mining operations and are about an inch in height. In young colonies this entrance leads into a small chamber, about six inches below the surface of the ground, situated, not at the end of the gallery but either to the left or right of it. As the colony increases the ants do not enlarge this original chamber, but, piercing its side, form another chamber near it with a small entrance hole. In large colonies, which never consist of more than about 200 individuals,

* Die Pilzgärten einiger südamerikanischer Ameisen von Dr. A. Möller, Jena, 1893.

† For descriptions see An. de la Soc. Ent. de Belg., t. xxxvii., 1893, p. 586.

a nest consists of two or three chambers which open on the original excavation. This is no longer used for growing the fungus in, but forms a sort of antechamber which generally contains material brought in by the ants to grow their mushrooms on, which is deposited here and gradually made use of. The chambers adjoining are more or less round, with a diameter of about 2-3 inches, and any small roots of plants growing through them are not cut away but used by the ants to hang their mushroom gardens on. These fill the interior of the chamber and consist of a grey spongy mass consisting of a great number of little irregular cells and resembling a coarse sponge, amongst which are scattered larvæ, pupæ, and ants. The walls of the cells consist of small round pellets resembling dust shot and are penetrated by and enveloped in white fungus hyphæ, which hold the mass together. Strewn thickly upon the surface of the garden are to be seen round white bodies about a quarter of a millimetre in diameter. These are what Möller terms "Kohlrabbi" clumps, and consist of an aggregation of hyphæ with spherical swellings on their ends. It is on this that the ants feed. The fungus found by Möller in the nests of the Brazilian fungus growers (*Acromyrmex*) is the *Rozites gongylophora*, Möller, and if it is not the same species cultivated by *S. opacus* it is, at any rate, very nearly related to it. As material to grow their mushrooms on the ants make use of particles of fruit, flowers, and leaves, but prefer the fruit. They do well in artificial nests, constructed on Sir John Lubbock's plan, and are easy to watch. I have tried them with all kinds of vegetable products; they have taken orange, banana, rose petals and leaves, and once they even made use of the dried glue from the back of an old book lying near their nest, but that day they had nothing else; if the choice be left to them they invariably take fruit and seem to prefer the orange amongst these. Very small particles of the white skin of the oranges are torn off, and, after undergoing a slight kneading process in the ants' mandibles, are planted in the nest. The neuters are all of the same size, varying but slightly and never exceed 4 mm. in length. They are more diurnal in their habits than other species of fungus growers, but also work a little at night. I have found winged forms in the nests in the month of July.